

# Electronic Communication Display System

## Background of the Invention

The present invention relates generally to employee communication programs, and, more particularly, to an electronic communication display system for publishing employee communications.

Conventional business communication programs have typically included providing a bulletin board upon which printed material, e.g., posters including photographs, artwork, designs and/or slogans, and messages which pertain to a client's business are displayed. Topics which may be the subject of business communications include employee communications involving safety, quality, teamwork, morale and self-motivation. For example, since safety is an important consideration in most working environments, a poster with a slogan such as using prudence in a potentially dangerous situation may be displayed for impressing upon employees an employer's requirement for observing on-the-job safety. Other examples of representative employee communications include messages such as news releases made by a client and messages for boosting employee morale such as those involving employee activities.

In conventional systems to which the invention relates, the posters and messages may be developed by graphic designers by hand or on a computer aided design system. Typically, they are printed as a large communication display and then sent to a client where the

communication display may be mounted onto a bulletin board. The bulletin board may be relatively sophisticated and creatively organized for efficiency and visual attention such as a three-panel bulletin board on the order of 26 inches (66 centimeters) by 63 inches (160 centimeters). For conventional systems to which the invention relates, the posters are typically regularly replaced by manual means depending on corporate goals, news of interest and employee activities.

At regular time intervals, such as once a month, clients may select new posters and messages and/or the new posters and messages are automatically selected, printed and shipped periodically to each client. Because of the large number and variety of clients and the specific requirements for certain users, there are significant inefficiencies associated with selecting, printing and shipping the employee communications. Also, achievement of a high degree of customization and selectivity is economically problematic.

Accordingly, it is desired to provide an efficient system which overcomes many of the deficiencies of prior art systems and services.

### **Summary of the Invention**

Briefly stated, the invention in a preferred form is an electronic communication display system which is at least partially disposed on a computer readable medium and is configured for transmitting data corresponding to media to a remote client location where the media is

displayed. The electronic communication display system comprises an electronic poster display board for displaying media, and a client computer server which receives data corresponding to the media for the electronic poster display board. A web server capable of communicating  
5 with the client server for transmission of data thereto is also provided. The web server along with an application server communicating with the web server formulates the data for the ultimate transmission to the client server.

At its most fundamental configuration, the electronic  
10 communication display system comprises two computers. The main server stores, sorts and keeps track of each client's order. It also receives the news, weather and sports information and reformats it for client use. Each remote location of the system has a "client" computer which is hooked up to the Internet and to a flat panel display device.  
15 This computer checks, via Internet, with the main server on a regular basis and retrieves the correct assortment of materials in electronic form. It then displays them on the flat panel display. The display may also include regularly updated news, weather and sports information.

In one particular embodiment of the invention, the client server  
20 has a web browser configured in kiosk mode for display of the media.

The web browser may contain a plurality of channels wherein each of the channels contains an electronic poster or an electronic message.

Another preferred form of the invention involves a method of

providing a customized poster service to a plurality of remote locations and comprises the steps of: generating a poster kit containing at least one electronic poster and/or electronic message for each client or subscriber selecting posters and/or messages by the client from the  
5 remote location; providing an electronic poster display board at each location; and communicating each selected poster and/or message over the Internet to each electronic poster display board for display of the least one electronic poster and/or electronic message.

An object of the present invention is to provide an electronic  
10 communication display system capable of electronically transferring business communications from a primary location to a plurality of remote locations.

Another object of the present invention is to provide an electronic communication display system which enhances customization and  
15 increases the variety of materials available for selection.

A further object of the present invention is to provide an electric communication display system which allows for substantially instantaneous transmission of selected materials to a remote location.

## 20 **Brief Description of the Drawings**

Other objects and advantages of the present invention will become apparent from the specification and drawings wherein:

Figure 1 is a schematic diagram of a representative embodiment

of an electronic communication display system in accordance with the present invention;

Figure 2 is a process flow diagram for an administrative portion of the embodiment of Figure 1; and

5 Figure 3 is a process flow diagram for a subscriber portion of the embodiment of Figure 1;

Figure 4 is a schematic annotated diagram of a representative electronic poster display board for use with the embodiment of Figure 1; and

10 Figure 5 is a representative screen which a subscriber may use in connection with the electronic communication system of Figure 1.

#### **Detailed Description of the Preferred Embodiments**

An electronic communication display system in accordance with  
15 an embodiment of the present invention is illustrated generally at 10. The electronic communication display system 10 provides for the transmission of client communications for display as media such as posters including designs and/or slogans and messages from a primary location for display at one or more remote client locations. As discussed  
20 above, the subject matter of the business communications may involve safety, quality, teamwork, morale, self motivation, client news releases, employee activities and others.

The term "media" as used herein is intended to include all forms

of visual communication including graphics, written and printed text along with photographs, visual works and artistic material developed for display alone or therewith.

The electronic communication display system 10 comprises a  
5 primary or administrative server system 12 located at a primary location and a multiplicity of client or subscriber communication and display systems 14, 114, 214 located at each remote client location. The client communication and display system 14 communicates with the main or administrative server system 12 via the Internet 16.

10 The administrative server system 12 is comprises a computer 13 which is configured to function as a first web server 18, a second web server 20, a data base server 22, and an application server 26. While the administrative server system 12 is described in terms of several services and server functions, a single computer 13 may provide all  
15 functions and incorporate all described services. The computer 13 may be any commercially available server such as that manufactured and marketed by the Compaq Corporation and may be connected to the Internet 16 via line 28 in a well known manner. The first web server 18 is configured to be accessible by one or more client work stations as  
20 more fully described hereafter for modifying the content of the employee communication.

The second web server 20 may be similar to web server 18 although modified to communicate via communication line 29 with one

or more client servers discussed in more detail below. It will be understood that while two web servers 18 and 20 are provided, one web server performing both functions may be employed instead.

The data base server 22 stores client information such as client  
5 identification, client routing location and client media data such as poster kits developed by a work station 24 and as modified by the application server 26 as discussed below. Numerous work stations 24 may be employed

Each work station 24 is configured so that a graphic designer  
10 may develop electronic posters and collect the posters together into kits which may contain, for example, collections of electronic posters and messages for a particular client. The media is created at the workstation 24, using software such as Adobe Photoshop™ or Adobe Illustrator™.

The posters are then sent to work station 18 where they are sorted by  
15 edition and client. The work station 24 communicates with the data base server 22 represented by communication line 30 in order to transmit various electronic posters, etc., which are developed at the work station 24, to the data base server. The electronic posters are converted into an appropriate format for transmission over the Internet  
20 16, such as file transfer protocol (FTP), and then stored before transfer to a client communication and display system 14, as discussed in more detail below. FTP is employed to obtain news, weather and sports data. Otherwise, in house file transmission is over local networks.

The coordination and communication with computer 13 is functionally identical in Fig. 1. The application server 26 communicates with both the first and second web servers 18, 20 represented by communication lines 32 and 34 and with the data base server 22 via communication line 36. The application server 26 provides coordination between the web servers 18 and 20 and access to the electronic poster kits contained in data base server 22. The application server 18 includes application software which tracks and distributes content according to client order entry procedures and as modified by subscribers during the subscription period.

The client communication and display system 14 comprises a computer 15 which includes a client workstation 38, a client server 42, and an electronic poster display board 40. The client workstation 38 communicates with the web server 18 via communication lines 28 and 44 and the Internet 16. The client workstation 38 preferably comprises a web browser sold under the trademark EXPLORER by the Microsoft Corporation of Redman, WA. Optionally, other web browsers, such as that sold under the trademark NETSCAPE by the Netscape Communications Corporation of Mountain View, CA, may be employed. The client work station 38 interactively communicates with a web server 18 in order to transmit client or subscriber input, for example to, modify an electronic poster kit and receive an updated description of the electronic poster kit. Such interactive communication can be as

frequent as described by the client.

The electronic poster display board 40 may be any suitably large display board but is preferably a flat panel gas plasma display, such as that manufactured and sold by the Sony corporation of Japan.

5           The client server 38 receives electronic poster kits (or media) in the form of data in a particular format, as discussed above, for display on the electronic poster display board 40. The client server 38 is illustrated as being connected to the electronic poster display board 40 by a communication line 46. It will be appreciated that the computer 15  
10           may be located on a housing supporting the electronic poster display board 40 but is preferably separated some distance therefrom. In any event, the client server 38 communicates with the web server 18 via communication lines 29 and 44 and the Internet 16. The client server 38 preferably comprises a web browser, such as discussed above,  
15           which is configured, in a kiosk mode whereby the browser receives the data from the web server 18 and generates a continuous display. In particular, it will be understood that a number of channels of the web browser may be used in order to simultaneously display various elements of the poster kit for varying amounts of time. An example of  
20           the foregoing is discussed below.

Referring now also to Figure 4, the client server 38 communicates electronic poster kits to the electronic poster display board 40 for display thereof. Preferably, the electronic poster display

board may comprise a plurality of sections for displaying different materials. For example, four separate sections 50, 52, 54 and 56 may be provided - each of which may be functioning simultaneously and at different update times and periods. Each section may sequentially display varying messages and/or posters, slogans, etc. For example, in section 50 an electronic poster 58 may be displayed fifteen (15) minutes and then switch to a custom executive poster 62. Section 52 may concurrently include an employee message 64, then switch to a Good Will Motivator™ media 66 thereafter switch to a management suggested letter 60 and. The relative timing may also be selected. For example, messages 64 and 66 may alternate every fifteen (15) minutes and may start seven and one half (7.5) minutes after the poster 58 is initially displayed in section 50. Section 54 may display any news and announcements such as news headlines, sports scores and local 3 or 5 day weather forecasts. The display may include media such as a client's name or trademark, etc. as illustrated at 70, which may be permanently affixed thereto. It will be appreciated that each of the communications lines 28, 29, 44 and 48 may comprise, for example, telephone, satellite or wireless hook up.

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### **Operation**

With reference to Figures 1, 2 and 3, using work station 24 a graphic artist creates a work which is compiled into a poster kit

including a collection of electronic posters in a data format, as discussed above, that is suitable for transmission over the Internet as shown in box 72. The electronic posters are cataloged electronically via the workstation 24 and stored in the data base server 18. See box 74.

5           The application server 18 and work station 24 function to group electronic posters. The posters may also be compiled into posters kits arranged by, for example, a particular client or client group such as retail clients or manufacturing clients. See box 76. For example, the subscribers of systems 14 and 114 may have access only to one set of  
10 poster kits while the subscriber of systems 214 has access only to a different set of posters. The application server is also configured to indicate the last time and date that revisions or updates have been made to the poster kits.

Each subscriber may modify these kits as will be more fully  
15 described hereafter. Once the kits are established, the client may select the specific electronic posters for display on the electronic communication display 40. Thereafter, the client server 38 communicates the electronic posters to the electronic communication display 40 as described above for display thereof. See box 80. The  
20 subscriber can query through the web browser to determine the latest times and dates of poster kit changes.

The client may also modify the client's poster kit as follows. Using a client workstation 38, the client contacts the web server 18

(see box 82 and 84) and logs onto the web server 18. After checking for proper password and client ID, (see 86), the client views the current kit contents at 88. The client may then choose between different options. The client may search for posters by topic, for exmple, posters  
5 with themes such as safety, attitude, cooperation, etc. The client may remove any unwanted electronic posters or other content at 90. The client may also search, using the application server 18, to select a particular poster or posters and add each selected poster to the poster kit at 92, 94 and 96. The client may have access to various screens  
10 such as screen 200 (Figure 5) to facilitate the search and selection. Optionally, the client may design its own electronic poster content within the application or simply provide electronic material for display all of which may be added to the poster kit at 98 and 100. Once a client has completed the modification, the electronic poster kit will be made  
15 available by the application server 18. Accordingly, when the client server 14 polls the web server 18, new media data is downloaded for display on the electronic communication display 40 which is represented at box 102.

While the present invention has been described in connection  
20 with what are presently considered to be the most practical and preferred embodiments, it is to be understood that the present invention is not limited to the disclosed embodiments. Rather it is intended to cover all of the various modifications and equivalent arrangements

